

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT

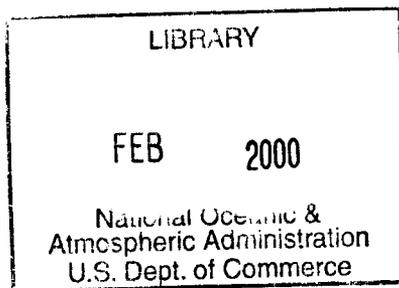
INDIA WEATHER REVIEW, 1966

Annual Summary

PART B

SNOWFALL

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CONTENTS

	Pages		Pages
WINTER PERIOD.....	B-1	POST MONSOON PERIOD.....	B-15
PRE MONSOON PERIOD.....	B-7	SUMMARY.....	B-18
SOUTH--WEST MONSOON PERIOD.....	B-11		

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ANNUAL SUMMARY - PART BS N O W F A L L

This part contains a summary of the reports of snowfall in the mountainous regions to the north of India based on (a) records of snowfall observations made at the observatories and (b) reports collected by local officers from the local residents, headmen of villages or from travellers who have passed through the region, and then transmitted to this office.

The amount of snowfall is usually measured by finding the depth of undisturbed snow lying on the ground. The measurements are given in metres or centimetres. At places provided with raingauges the snow, collected in the gauge, is melted and measured as rain. The heights of well-known peaks are reported to the nearest metre, wherever available, while the heights of mountain ranges etc. are reported in tens of metres. In the description the figures given for depths for a month indicate the total amount of snowfall which occurred during that month.

Winter Period - January and FebruaryI - JAMMU AND KASHMIRSRINAGAR DISTRICT

Srinagar (1585 m.) - There was only one occasion of snowfall in January, the total precipitation recorded being about 0.6 mm. It snowed on five days in February at the station proper while many snowfalls were reported to have occurred on adjoining peaks and passes. Total precipitation in February was about 21 cms. A thick layer of snow was visible on all the adjoining peaks at the end of the period.

The snowfall was below normal in January and above normal in February.

Sonamarg (2515 m.) - It snowed on three days in January, viz. on 17th, 25th and 31st; the total depth being 20 cm. Snowfall occurred in the spells of two to four days in February viz. from 7th-9th; from 20th to 23rd and from 25th to 26th. The total depth was 66 cm. in February.

The snowfall was below normal in January and above normal in February.

DODA DISTRICT

Patnitop (Batote) (2033 m.) - Snowfalls were reported to have occurred on high peaks of mountain ranges such as Pir Panjal, Sansar and Patnitop on two days in January viz. the 25th and the 29th while only once in February on the 12th.

The snowfall was normal during the period.

LADAKH DISTRICT

Kargil (2679 m.) - There was no occurrence of snowfall in January. In February, the snowfall was experienced on 8th-9th which was light to moderate in character followed by light showers of snowfall on 11th - 13th and also on 26th which was moderate. The total depth of snow was 18 cm. in February. Though the snow had melted due to warm weather, there was 2.1 m. of snow accumulation at Shack and 46 cms each on Namikala and Fatola passes.

The snowfall was below normal during the period.

Leh (3514 m.) - Snowfalls were experienced on 22nd-23rd January, the depth being 3 cm. at the station proper and about 15 cm. on the peaks. It snowed on 10th, 11th and 20th February, the depth being 12 cm. at the station proper, and 46 cm. on passes.

The snowfall was below normal in January and above normal in February.

Khangral - It snowed on 20th January, the total depth being about 1 cm. In February, there were snowfalls on five days viz. on 7th, 13th, 21st, 26th and 27th, the total depth being 33 cm.

The snowfall was normal during the period.

II - PUNJAB AND HIMACHAL PRADESH

CHAMBA DISTRICT

Pangi

Kilar (Pangi Range) (2564 m.) - No snowfall occurred during January. It snowed on 7th-10th; and 12th-13th February, the total depth being 69 cm.

The snowfall was above normal in February.

Churah

Tissa (1570 m.) - No snowfall occurred during January. There was only one occurrence of snowfall on 22nd February, the depth being 10 cm.

The snowfall was normal in February.

Bhandal (1730 m.) - No snowfall occurred in January. It snowed on three days on 13th, 15th and 22nd February the total depth being 25 cm.

The snowfall was normal in February.

Chamba

Chamba (924 m.) - There were no snowfalls at the station proper or on the surrounding peaks in January. In February the surrounding peaks only experienced snowfall. The amounts of snow accumulated on the well-known passes of the region were reported as under :-

Name of Pass	<u>Accumulation</u>	
	January	February
Sach (4410 m.)	2.1 m.	1.1 m.
Kalichho (5000 m.)	3.0 m.	1.8 m.
Drati	3.0 m.	1.8 m.

The snowfall was normal in January and below normal in February.

Ludrera (924 m.) - No snow fell during the period.

Bhanota (914 m.) - No snow fell during the period.

Upper Chamba Range

Chhatrari (1793 m.) - No snowfalls were experienced at the station proper during January. It snowed on 21st February at the station proper, the depth being 6 cm. The highest peaks of the range such as Kanikote, Sabrew and Baliani experienced snowfall on 10th to 14th, 22nd and on 27th February. The depth of snow accumulation was 3.7 m. each at Baliani and Kanikote peak and 4.0 m. at Sabrew at the end of the period.

The snowfall was below normal during the period.

Bhattiyat

Kalatop (Dalhousie Range) (2414 m.) - No snowfalls occurred during January. It snowed on 10th to 13th; 20th to 21st and on 26th February, the total depth being 53 cm.

The snowfall was below normal in January and above normal in February.

Chowari (1021 m.) - No snow fell during the period.

Bathree (1372 m.) - No snow fell during the period.

Bharmaur

Bharmaur (2155 m.) - No snow fell in January. The snowfall occurred on three days in February viz. on the 13th, 22nd and 27th. The total depth of snowfall was about 46 cm. in February.

The snowfall was below normal in January and above normal in February.

MAHASU DISTRICT

Chopal (2342 m.) - No snowfalls were experienced at the station proper, while the depth of snow on the highest peak of Chur Dhar was about 20 cm. The snow fell on 21st only in February, the total depth being 8 cm. at the station proper and 46 cm. on Chur Dhar. The amount of snow accumulation on the Chur Dhar was about 46 cm. at the end of the period.

The snowfall was below normal in January and normal in February.

Phancha (Pandra Bis Range) (2271 m.) - No snow fell during January. Snowfall was experienced in February, the total depth being 28 cm.

The snowfall was below normal during the period.

Junga (1989 m.) - No snow fell during the period.

Kumarsain (1388 m.) - No snow fell during January but 46 cm. of snowfall was experienced in February.

The snowfall was below normal in January and normal in February.

Theog (2286 m.) - The station proper did not experience any snowfall in January. Snowfall was experienced in February both at the station proper and on the well-known peaks such as Tir Mahasu and Kanagi, the total depths being 15 cm. at the station proper and 30 cm. each on Tir Mahasu and Kanagi. In the absence of melting the snow accumulations on the peaks Tir Mahasu and Kanagi at the end of the period were the same as the above reported amounts.

The snowfall was below normal in January and normal in February.

Kotkhai (1676 m.) - The station proper did not receive any snowfall during the period, but the surrounding peaks experienced snowfall in both the months, the total depths being 3 cm. in January and 76 cm. in February. Snowfall during the period was reported to be useful to the standing crops.

The snowfall was below normal during the period.

Suni (510 m.) - No snow fell during January. In February, little snowfall was experienced in the forests of this sub-tehsil, the depth being about 25 cm.

The snowfall was below normal during the period.

Rohru (1524 m.) - It snowed at heights above 3660 m. in January and at heights above 1830 m. in February. The respective depths in these months were about 61 cm. and 15 cm. to 1.2 m. at heights ranging from 1830 m. to 4270 m.

The snowfall was below normal during the period.

Arki (1219 m.) - No snow fell during the period.

Solan (1530 m.) - No snow fell during the period.

Kasumpti (1989 m.) - No snow fell in January. Snowfall was experienced on four days in February, the total depth being 20 cm.

The snowfall was below normal during the period.

KINNAUR DISTRICT

Kilba-Kailash Range

(i) Kilba (1829 m.) - No snow fell during January. Snowfall was experienced on 27th February, the total depth being about 3 cm.

The snowfall was below normal during the period.

(ii) Sangla (2591 m.) - No snow fell during January. It snowed on 8th, 12th-14th, 20th, 26th-27th February, the total depth being 74 cm. The highest fall of 23 cm. was recorded on 26th February.

The snowfall was below normal in January and normal in February.

KULU DISTRICT

Banjar (Inner Seraj Sub-Tehsil) (640 m.) - The total depths of snowfall and the snow accumulations at the ends of the months were reported as under :-

Name of Peak	Depth of Snowfall		Accumulation	
	January	February	January	February
Sakirn	0	1.2 m.	0	91 cm.
Lambri	0	1.5 m.	0	1.2 m.
Shēpakaru	0	2.1 m.	61 cm.	2.4 m.
Gargarasan	0	1.8 m.	91 cm.	2.4 m.
Bashelu	0	91 cm.	0	61 cm.
Pallach	0	91 cm.	30 cm.	91 cm.
Tirth	0	1.8 m.	1.2 m.	2.7 m.

The snowfall was below normal in January and normal in February.

Nirmand (Outer Seraj Sub-Tehsil) (1218 m.) - No snow fell during the period.

KULU - No snow fell during January. It snowed on 8th, 16th and 24th February at the station proper and on the highest peak Jalori Jot. There was snowfall at high peaks during 25th to 28th February. There was 1.2 m. of snow accumulation at heights between 1680 m. to 2740 m. at the end of the period.

The snowfall was below normal during the period.

SIRMUR DISTRICT

Rajgarh - No snow fell during January. Snowfall occurred on 12th, 20th and 27th February. The total depths of snowfall were reported as under :-

Height	Depth of Snowfall
1220 m. to 1520 m.	10 cm. to 15 cm.
1830 m. to 2130 m.	20 cm. to 40 cm.
2130 m. to 2740 m.	35 cm. to 73 cm.
2740 m. to 3505 m.	50 cm. to 80 cm.

The depths of snowfall at well-known hills in February were reported as under:

S.No.	Name of Hill	Depth of Snowfall
1.	Topi Dhar	13 cm. to 20 cm.
2.	Galag Dhar	30 cm. to 46 cm.
3.	Batham Dhar	35 cm. to 43 cm.
4.	Banali Dhar	33 cm. to 39 cm.
5.	Bhorag Dhar	51 cm. to 76 cm.
6.	Habban Dhar	15 cm. to 30 cm.
7.	Thanda Dhar	30 cm. to 46 cm.
8.	Palu Dhar	15 cm. to 20 cm.
9.	Kanog Dhar	10 cm. to 15 cm.
10.	Sarjagas	0
11.	Chowa Dhar	0
12.	Sur Dhar	0

The snowfall was below normal during the period.

Pachhad - No snow fell during the period.

Paonta - No snow fell during the period.

Renuka - The depths of snowfall at the well-known peaks in the tehshil were reported as under :-

Name of Peak	January	February
Shan Dhar	15 cm.	-
Jani Dhar	15 cm.	18 cm.
Chur Dhar	20 cm.	30 cm.
Haripur Dhar	15 cm.	25 cm.
Peuli Dhar	8 cm.	15 cm.
Chab Dhar	-	20 cm.
Chandpur Dhar	-	20 cm.

The snowfall was below normal during the period.

Nahan - No snow fell during the period.

Shillai - No snow fell during January. The snowfalls were experienced on 12th-13th, 20th-21st and 27th-28th February, the total depth being about 56 cm. There was about 5 cm. to 8 cm. snow accumulation on Jani Dhar and Chanpur Dhar at the end of the period.

The snowfall was below normal during the period.

III - UTTAR PRADESH

TEHRI GARHWAL DISTRICT

No snowfalls were reported during the period.

GARHWAL DISTRICT

No snowfalls were reported during the period.

ALMORA DISTRICT

The total depths of snowfall and the amounts of snow accumulation at the ends of the months on the well-known peaks of Malla Danpur were reported as under :-

Name of Peak	Depth of Snowfall		Accumulation	
	January	February	January	February
Kautela	0	1.5 m.	0	61 cm.
Kafini	0	2.4 m.	0	91 cm.
Bankatia	15 cm.	3.0 m.	1.8 m.	2.4 m.
Pindar	30 cm.	3.0 m.	2.0 m.	2.7 m.
Nandadevi	30 cm.	4.0 m.	2.6 m.	3.0 m.
Sundardhunga	15 cm.	2.7 m.	1.2 m.	2.1 m.

The snowfall was below normal in January and above normal in February.

NAINITAL DISTRICT

Mukteswar (2310 m.) - Light snowfalls occurred on the 4th and 26th January and again on the 13th February. The total depths in these months were 13 cm. and 5 cm. respectively. The snowfalls extended to all the surrounding high peaks such as Ramgarh, Gagah, Nainital during both the months.

The snowfall was below normal during the period.

IV - BENGAL

Darjeeling - No snow fell during January. The report for February was not received.

V - ASSAM

Lachhan - It snowed on 3rd to 5th and 26th-27th January, the total depth being 1.1 m. The report for February was not received.

Pre-Monsoon Period - March to MayI - JAMMU AND KASHMIRNORTH BARAMULLAH DISTRICT

Gulmarg (2652 m.) - The reports for March and April were not received. The station reported the occurrences of snowfall, occasionally accompanied by rain, during May. There was heavy accumulation of snow on the well-known peaks such as Apharwat, Handibal etc. at the end of May.

SRINAGAR DISTRICT

Srinagar (1585 m.) - No snowfalls were experienced in the valley during the period but light snowfalls were confined to the high peaks and passes in each month. The total precipitation recorded was 15 cm. in March, 10 cm. in April and 9 cm. in May. A thick layer of snow was visible on all the adjoining peaks at the end of March.

The snowfall was below normal during the period.

Sonamarg (2515 m.) - The reports for March and April were not received. It snowed on 25th May, the total depth being about 4 cm. All passes remained closed and covered with snow from 1st to 14th and 24th to 28th May.

The snowfall was below normal in May.

LADAKH DISTRICT

Kargil (2679 m.) - It snowed on 5th, 21st-22nd and 27th March, the total depth being about 6 cm. The total snow accumulation at the end of March was 1.4 m. at Ambuli Lal Pass, 30 cm. at Fotola pass and 61 cm. at Nambikala pass. The report for April was not received. Snowfalls were generally confined to high peaks in May, the accumulation there at the end of May being about 1.2 m.

The snowfall was above normal in March and May.

Leh (3514 m.) - The snowfalls were mostly confined to heights above 5490 m. in March, the total depth being about 30 cm. at these heights and about 3 cm. at the station proper. In April, it snowed on 6th, 18th and 28th, the total depth being about 5 cm. at the station proper and about 76 cm. at heights ranging from 5490 m. to 6100 m. The snowfalls were experienced on 8th, 24th to 26th and 30th May the total depths being about 14 cm. at the station proper and about 91 cm. at heights between 5490 m. to 6100 m.

The snowfall was normal in March and above normal in April and May.

Khangral - It snowed on 3rd, 22nd, 27th and 29th March, the total depth being about 63 cm. The reports for April and May were not received.

The snowfall was above normal in March.

UDHAMPUR DISTRICT

Banihal - The reports for March and April were not received. In May, snowfalls were experienced on two days. The accumulation on eastern ranges of Pirpanjal was less than usual.

Qazigund - The reports for March and April were not received. Slight snowfall was experienced over Banihal pass and eastern side of mountains in May. There was enough accumulation of snow on adjoining peaks and passes at the end of the period.

II - PUNJAB AND HIMACHAL PRADESHCHAMBA DISTRICTPangi

Kilar (Pangi Range) (2564 m.) - The snowfalls were experienced on 4th, 18th, 19th and 27th in March and on 22nd, 25th, 28th and 29th in April, the total depths being 46 cm. in March and 25 cm. in April. Snowfalls were confined mostly to high peaks in May, the total depth being about 30 cm. to 1.5 m.

The snowfall was below normal in May.

Churah

Tissa (1570 m.) - No snow fell during the period.

Bhandal (1730 m.) - It snowed on 5th March; the total depth being 5 cm. Snowfall was experienced at heights above 1830 m. in March. No snow fell during April and May.

The snowfall was normal in March.

Chamba

Chamba (924 m.) - There was no occurrence of snowfall at the station proper during the period. The snowfalls were confined to heights above 1830 m. in March and above 2440 m. in April. The amounts of snow accumulation on some well known passes at the end of each month were reported as under :-

Name of Pass	Accumulation		
	March	April	May
Sach	1.2 m.	61 cm.	0
Kalichho	2.1 m.	1.5 m.	61 cm.
Drati	1.8 m.	91 cm.	0

The snowfall was below normal during the period.

Ludrera (924 m.) - No snow fell during the period.

Bhanota (914 m.) - No snow fell during the period.

Upper Chamba Range

Chattrari (1793 m.) - It snowed on 4th and 18th March, the total depth being about 4 cm. The snowfall occurred at heights above 1830 m. in March. No snow fell during April at the station proper, as the snowfalls were mostly confined to heights above 2440 m. In May, snowfalls were experienced on adjoining peaks and passes on 10th to 12th. The depths of snowfall on Kanikote, Sabrew and Baliani peaks were 61 cm. each in March, 30 cm. each in April and 30 cm. each in May. The amounts of snow accumulation on the well-known higher passes and peaks, were as under :-

Name of Peak/Pass	Accumulation		
	March	April	May
Baliani	2.7 m.	2.4 m.	2.1 m.
Sabrew	3.0 m.	2.7 m.	2.4 m.
Kanikote	2.7 m.	2.4 m.	1.8 m.

The snowfall was reported to be above normal during the period.

Bhattiyat

Kalatop (Dalhousie Range) (2414 m.) - It snowed on 4th and 18th March, the total depth being 14 cm. About 1 cm. of snowfall was experienced on 22nd April while snowfall also occurred on 11th-12th May, the total depths being 18 cm. Snowfalls occurred above heights of 1830 m. in March and 2440 m. in April.

The accumulation was reported to be normal.

Chowari (1021 m.) - No snow fell during the period.

Bathree (1372 m.) - No snow fell during the period.

Bharmaur

Bharmaur (2155 m.) - Snowfalls were experienced on the 5th and 19th March, the total depth being 23 cm. The snowfalls occurred at elevations above 1830 m. No snow fell in April and May.

The snowfall was below normal during the period.

MAHASU DISTRICT

Chopal (2342 m.) - The station proper did not experience any snowfall during the period. The depth of snow at Chur Dhar was reported to be 30 cm. in March.

Phancha (Pandra Bis Range) (2271 m.) - The total depth of snow recorded in March was about 12 cm. No snow fell during April and May.

The snowfall was below normal during the period.

Junga (1989 m.) - No snow fell during the period.

Kumarsain (1388 m.) - No snow fell during March and April. The report for May was not received.

Theog (2286 m.) - No snow fell during March and April. The report for May was not received.

Kotkhai (1676 m.) - The snowfall occurred at both the stations proper and at the adjoining peaks in March, the total depth being about 1 cm. at the station proper and about 4 cm. on the peaks. This snowfall was found to be useful for the standing crops. No snow fell during April and May.

The snowfall was below normal during the period.

Suni (510 m.) - No snow fell during March and April. The report for May was not received.

Rohru (1524 m.) - The snowfalls were confined to heights above 1520 m. in March and above 4270 m. in April and May. The total depths in the respective months were 23 cm. to 1.8 m., 1.1 m. and 76 cm.

The snowfall was below normal in March and above normal in April and May.

Solan (1530 m.) - No snow fell during the period.

Kasumpti (1989 m.) - Snowfall was experienced on one day in March, the total depth being 3 cm. No snow fell during April and May.

KINNAUR DISTRICT

(i) Kilba (1829 m.) - The report for March was not received. No snow fell during April and May.

The snowfall was below normal during April and May.

(ii) Sangla (2591 m.) - The report for March was not received. No snow fell during April and May.

The snowfall was below normal during April and May.

KULU DISTRICT

Nirmand (Outer Seraj Sub-Tehsil) (1218 m.) - No snow fell during the period.

MANDI DISTRICT

Mandi Forest Division - The reports for March and April were not received. No snow fell during May.

The snowfall was below normal in May.

SIRMUR DISTRICT

There was no occurrence of snowfall during the period throughout the district.

III - UTTAR PRADESH

TEHRI GARHWAL DISTRICT

No snowfalls occurred during period.

GARHWAL DISTRICT

No snowfalls occurred during the period.

ALMORA DISTRICT

The total depths of snowfall and the amounts of snow accumulation at the end of each month on the well-known peaks of Malla Danpur were as under :-

Name of Peaks	March	April	May
SNOWFALL			
Kautela	1.2 m.	0	0
Kafini	2.1 m.	0	0
Bankatia	2.6 m.	76 cm.	15 cm.
Nanda Devi	3.4 m.	61 cm.	30 cm.
Pindar	2.4 m.	30 cm.	23 cm.
Sundardhunga	2.1 m.	30 cm.	15 cm.
ACCUMULATION			
Kautela	61 cm.	61 cm.	0
Kafini	91 cm.	76 cm.	0
Bankatia	2.4 m.	2.4 m.	1.5 m.
Nanda Devi	2.9 m.	2.7 m.	2.4 m.
Pindar	2.6 m.	2.4 m.	1.5 m.
Sundardhunga	2.0 m.	1.8 m.	1.1 m.

The snowfall was above normal during the period.

NAINITAL DISTRICT

Mukteswar (2310 m.) - No snow fell during the period.

IV - ASSAM

Gangtok - Nathula Road :-

Snowfalls occurred on the 13th, 18th to 20th March, the total depth being 79 cm. at Gangtok-Nathula Road and 1.5 m. at Sherbathang. Snowfalls were experienced at Gangtok-Nathula Road on the 7th, 18th, 19th and 21st April, the total depth being 75 cm. At Sherbathang, snowfalls occurred on 12 days in April out of which there were spells of five and six days commencing from 16th and 21st respectively, the total depth being 1.7 m. The report for May was not received.

Chungthang

The report for March was not received. It snowed on 7th-8th and 18th April, the total depth being 19 cm. The report for May was not received.

South-west Monsoon Period - June to September

June - July

I - JAMMU AND KASHMIR

NORTH BARAMULLAH DISTRICT

Gulmarg (2652 m.) - Three snowfalls were observed on Aphaarwat and Handibal mountains in each month, the dates being 3rd, 7th and 24th in June and 12th, 14th and 16th in July. The total precipitation in the respective months was 3 cm. and 11 cm. Snow accumulation was reported to be normal at the end of the period.

The snowfall was below normal in June and above normal in July.

SRINAGAR DISTRICT

Srinagar (1585 m.) - No snowfalls were experienced in the region during June and July. However, light snowfall occurred on high peaks and passes in July, when the snowline was roughly at 5490 m. The snow accumulation was present on the surrounding passes and peaks during the entire period which was about 1.2 m. to 1.8 m. at the end of the period.

LADAKH DISTRICT

Leh (3514 m.) - No snow fell during the period.

Khangral

No snowfalls were experienced at the station proper during the entire period. However, snowfalls were confined to high peaks such as Namika and Fatola in both the months, the total depths thus being 61 cm. to 1.2 m. in June and 30 cm. to 61 cm. in July.

The snowfall was normal during the period.

II - PUNJAB AND HIMACHAL PRADESHCHAMBA DISTRICTChurah

Tissa Range - No snow fell during the period.

Upper Chamba Range

Chhatrari (1793 m.) - Snowfalls were observed on the higher peaks of the range on the 14th, 20th and 27th June, the total depth being 15 cm. each on Kanikote, Sabrew and Baliani peaks. The amounts of snow accumulation at the end of June on some well-known peaks are - Baliani peak - 1.5 m., Kanikote peak - 1.2 m., and Sabrew peak - 1.8 m. The report for July was not received.

The snowfall was above normal in June.

Bhattiyat

Bhattiyat Range - No snow fell during the period.

Trehta Range - No snow fell during the period.

Bharmaur

Bharmaur Range - No snow fell during the period.

MAHASU DISTRICT

No snowfalls were experienced at the stations Phancha (Pandra Bis Range) (2271 m.), Junga (1989 m.), Kotkhai (1676 m.) and Arki (1219 m.) during the entire period. No snow fell at Chopal (2342 m.) in June and its report for July was not received. No snow fell at Rampur (1067 m.) in July and its report for June was not received.

KINNAUR DISTRICT

No snowfalls were reported during June by the stations Kilba (1829 m.)/in Kilba-Kailash Range. The report for July was not received.

/and Sangla(2591 m.)

KULU DISTRICT

Nirmand (Outer Seraj Sub-Tehsil) (1218 m.) - No snow fell in June. The report for July was not received.

SIRMUR DISTRICT

No snow fell during the period.

III - UTTAR PRADESHTEHRI GARHWAL DISTRICT

No snowfalls were experienced during the period.

GARHWAL DISTRICT

No snowfalls were experienced during the period.

ALMORA DISTRICT

The total depths of snowfall and the amounts of accumulation at the ends of the months on some well-known peaks of Malla Danpur were as under :-

Name of Peak	Depth of Snowfall		Accumulation	
	June	July	June	July
Kautela	0	0	0	0
Kafini	0	0	0	0
Bankatia	30 cm.	46 cm.	1.5 m.	1.7 m.
Nanda Devi	46 cm.	61 cm.	2.1 m.	2.3 m.
Pindar	30 cm.	46 cm.	1.5 m.	1.7 m.
Sundardhunga	30 cm.	46 cm.	91 cm.	1.2 m.

The snowfall was normal during the period.

NAINITAL DISTRICT

Mukteswar (2310 m.) - No snowfall occurred during the period.

August - SeptemberI - JAMMU & KASHMIRNORTH BARAMULLAH DISTRICT

Gulmarg (2652 m.) - No snow fell in August. Snowfalls occurred on 8th to 10th September on Handibal and Apharwat Mountains which melted away after sometime. Snow accumulation was present on these mountains in both the months.

The snowfall was normal during the period.

SRINAGAR DISTRICT

Srinagar (1585 m.) - No snowfalls were experienced in the valley during the entire period. Snowfalls occurred on adjoining peaks and passes in September, when the snow line was at the elevation of 4880 m. The total precipitation was 5 cm. in August and 10 cm. in September. Snow accumulation was present on high peaks and passes in both the months.

LADAKH DISTRICT

Leh (3514 m.) - The station proper did not receive any snowfall during the entire period, but the high peaks and passes situated at heights ranging from 5490 m. to 6100 m., received about 30 cm. of snowfall in three days in August and about 89 cm. of snowfall in six days in September, the actual dates being 7th to 9th in August and 1st, 7th, 8th, 9th, 18th, 21st and 23rd in September. The snow accumulation at these peaks was estimated to be 15 cm. at the end of August and 30 cm. at the end of September.

The snowfall was about normal during the period.

Khangral - No snowfalls were experienced at the station proper in August, while the estimated depth of snowfall on Namika and Fatola peaks was about 30 cm. to 61 cm. in August. It snowed in September, the total depth being 11 cm. at the station proper and 91 cm. to 1.5 m. each on Namika and Fatola peaks.

The snowfall was normal in August and above normal in September.

II - PUNJAB AND HIMACHAL PRADESHChurah

Tissa Range - No snow fell during the period.

Upper Chamba Range

Chhattrari (1793 m.) - The report for August was not received. The higher peaks of the range experienced snowfall on the 7th to 9th September, the total depth being 15 cm. The amounts of accumulation of snow on some well-known peaks at the end of September were - Baliani - 15 cm., Kanikote - 15 cm. Sabrew - 23 cm.

The snowfall was normal in September.

Bhattiyat

Bhattiyat Range - No snow fell during the period.

Trehta Range - No snow fell during the period.

Bharmaur

Bharmaur Range - No snow fell during the period.

MAHASU DISTRICT

No snow fell during the period at Phancha (Pandra Bis Range) (2271 m.) Junga (1989 m.), Rampur (1067 m.), Kotkhai (1676 m.) and Arki (1219 m.).

SIRMUR DISTRICT

There was no occurrence of snowfall in the district during August and September.

III - UTTAR PRADESHTEHRI GARHWAL DISTRICT

No snow fell during the period.

GARHWAL DISTRICT

No snow fell during the period.

ALMORA DISTRICT

The total depths of snowfall and the amounts of snow accumulation on some well-known peaks of Malla Danpur were reported as under :-

Name of Peak	Depth of Snowfall		Accumulation	
	August	September	August	September
Kautela	0	15 cm.	0	0
Kafini	0	30 cm.	0	0
Bankatia	46 cm.	61 cm.	1.7 m.	1.8 m.
Nanda Devi	61 cm.	76 cm.	2.4 m.	2.7 m.
Pindar	30 cm.	61 cm.	1.7 m.	1.8 m.
Sundardhunga	30 cm.	46 cm.	1.2 m.	1.2 m.

The snowfall was normal during the period.

NAINITAL DISTRICT

Mukteswar (2310 m.) - No snow fell during the period.

Post Monsoon Period - October to December.

I - JAMMU AND KASHMIRNORTH BARAMULAH DISTRICT

Gulmarg (2652 m.) - Four snowfalls were reported to have occurred in each of the months October and December, the actual dates being 19th-20th and 25th-26th in October and 25th, 28th, 29th-30th in December. Snowfalls were experienced throughout the area of Gulmarg including Handibal and Apharwat mountains in these months. Total precipitation in these months was 12 cm. in October and 13 cm. in December. No snow fell in November.

The snowfall was about normal during the period.

SRINAGAR DISTRICT

Srinagar (1585 m.) - Snowfalls were reported to have occurred on adjoining peaks and passes in October and November. The snowline had descended to elevations of 2440 m. in November. There were five occasions of snowfall in the last week of December, the total precipitation being ^{about} 2 cm. The snowline had further descended to elevation of 1830 m. in December. Snow accumulation on high peaks and passes could not be estimated in any of the months but was reported to be normal.

The snowfall was below normal during the period.

Sonamarg (2515 m.) - The station experienced snowfall on the 10th and 19th October, the total depth being about 2.7 m. All the peaks and passes were covered with snow at the end of October. The reports for November and December were not received.

The snowfall was above normal in October.

DODA DISTRICT

Patnitop (Batote) (2033 m.) - The reports for October and November were not received. There was only one occasion of snowfall in the last week of December which extended to Patnitop, Sansar Range and Doda hills, the total

depth being 4 cm. at the station proper and 8 cm. at highest pass.

The snowfall was about normal in December.

LADAKH DISTRICT

Kargil (2679 m.) - The report for October was not received. No snow fell during November and December.

Khangral - The station proper experienced snowfalls in all the months, the total depths at the station proper being 20 cm. in October, 61 cm. to 91 cm. in November and 91 cm. in December. The depths of snowfall at Namika were 1.2 m. each in October, November and December and those at Fatola were 91 cm. in October, 1.5 m. each in November and December.

The snowfall was about normal during the period.

II - PUNJAB AND HIMACHAL PRADESH

Churah

Tissa Range - No snow fell during the period.

Upper Chamba Range

Chattrari (1793 m.) - Snowfall occurred on the highest peaks of the range on the 1st, 11th and 19th October, the depths being about 30 cm. each on the peaks of Kanikote, Sabrew and Baliani. It snowed on the highest peaks of the range on the 2nd, 12th and 19th November and again on 25th and 29th December, the depths being about 30 cm. each in November and 1.8 m. each in December on the peaks of Kanikote, Sabrew and Baliani. The amounts of snow accumulation at the end of each month on the well-known peaks were as under :-

Name of Peaks	A c c u m u l a t i o n		
	October	November	December
Baliani	46 cm.	61 cm.	1.8 m.
Kanikote	38 cm.	53 cm.	1.7 m.
Sabrew	53 cm.	61 cm.	1.8 m.

The snowfall was above normal in October and below normal in November and December.

Bhattiyat

Bhattiyat Range - No snow fell in October and November. In December about 55 cm. of snowfall was experienced throughout the range.

Trehta Range - No snow fell in October and November. Snowfalls were experienced in December, the total depth being 9 cm.

Bharmaur

Bharmaur Range - No snow fell in October. The depth of snowfall received in November was estimated to be about 57 cm. There was no occurrence of snowfall in December.

MAHASU DISTRICT

Chopal (2342 m.) - The reports for October and November were not received. There was only one occasion of snowfall on 31st December, the total depth being 20 cm. at the station proper and 61 cm. on Chur Dhar.

The snowfall was below normal in December.

Phancha (Pandra Bis Range) (2271 m.) - No snow fell during October and November. The depth of snowfall, received in December, was about 4 cm.

The snowfall was below normal during the period.

Junga (1989 m.) - No snow fell during the period.

Rampur (1067 m.) - No snow fell during October and November, snowfalls were experienced on the 26th and 30th December. The lowest height to which snowfall descended was 1520 m. The amount of snow accumulation on Daran Ghati was about 76 cm. at the end of the period.

The snowfall was below normal during the period.

Kotkhai (1676 m.) - No snow fell during the period.

Suni (510 m.) - The reports for October and November were not received. Snowfalls were experienced on the 26th, 29th and 30th December, the total depth on the adjoining peaks being 10 cm. There was no snow accumulation at the end of the period, as the snow melted away.

The snowfall was below normal in December.

Arki (1219 m.) - No snow fell during the period.

Solan (1530 m.) - The reports for October and November were not received. No snow fell during December.

SIRMUR DISTRICT

No snow fell during the period.

III - UTTAR PRADESH

TEHRI GARHWAL DISTRICT

No snow fell during October and November. In December, snowfalls were experienced on the 29th and 30th at Dhanolti. The depth of snow was estimated to be about 15 cm. over the ridges at heights above 2130 m. The peaks of Surkhanda, Nag Tiba, Taru-Ka-Danda were reported to have covered with snow.

The snowfall was below normal during the period.

GARHWAL DISTRICT

No snow fell during the period.

ALMORA DISTRICT

The depths of snowfall and the amounts of snow accumulation at the end of October and November on the well-known peaks of Malla Danpur were reported as under :-

Name of peak	October	November	December
<u>SNOWFALL</u>			
Kautela	10 cm.	13 cm.	-
Kafini	30 cm.	36 cm.	-
Bankatia	70 cm.	91 cm.	-
Nanda Devi	91 cm.	81 cm.	-
Pindar	69 cm.	81 cm.	-
Sundardhunga	51 cm.	61 cm.	-
<u>ACCUMULATION</u>			
Kautela	0	0	-
Kafini	0	0	-
Bankatia	1.8 m.	1.8 m.	-
Nanda Devi	2.4 m.	2.7 m.	-
Pindar	1.8 m.	1.8 m.	-
Sundardhunga	1.2 m.	61 cm.	-

The report for December was not received.

The snowfall was below normal in October and November.

NAINITAL DISTRICT

Mukteswar (2310 m.) - No snow fell during the period.

S U M M A R Y

Winter Period - January and February :

Snowfall during the period was normal in Jammu and Kashmir and slightly below normal in Punjab, Himachal Pradesh and Uttar Pradesh.

Pre-Monsoon Period - March to May :

Snowfall during the period was normal in Jammu and Kashmir, slightly below normal in Punjab, and Himachal Pradesh and above normal in Uttat Pradesh.

Monsoon Period - June and July :

As usual, practically no snow fell in Jammu and Kashmir, Punjab and Himachal Pradesh, while snowfall was normal in Uttar Pradesh.

Monsoon Period - August and September :

The snowfalls were mostly confined to the high altitudes. The snowfall was normal in Jammu and Kashmir and Uttar Pradesh.

Post-Monsoon Period - October to December :

Snowfall during the period was normal in Jammu and Kashmir and below normal in Punjab, Himachal Pradesh and Uttar Pradesh.

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N.B :- It is not possible to adopt a single classification of seasons which will be satisfactory for the whole of India. The classification adopted in this publication is devised from the point of view of rainfall in the country.